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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/525,275	05/24/2005	Antti Poikolainen	METSO-29	4968
36528 7590 05/16/2007 STIENNON & STIENNON 612 W. MAIN ST., SUITE 201 P.O. BOX 1667 MADISON, WI 53701-1667			EXAMINER HUG, ERIC J	
			ART UNIT 1731	PAPER NUMBER
			MAIL DATE 05/16/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/525,275

Applicant(s)

POIKOLAINEN ET AL.

Examiner

Eric Hug

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 February 2005 and 24 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 19-23, 25-29, 35, and 36 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Buck (US 5,389,206).

Buck discloses a twin-wire forming section of a paper machine comprising forming wire loops 11 and 12, the two wires forming a twin-wire dewatering area therebetween. The dewatering area is divided into zones. The first dewatering zone (I, see Figure 1) includes a fixed forming shoe 16 having a curved surface deck in engagement with forming wire 11. The

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fixed forming shoe 16 is provided with an open surface and a source of underpressure (see column 4, lines 19-21). Forming wire 12 is unsupported by the forming shoe. The next dewatering zone (II) includes a plurality of fixed dewatering blades 28 engaging forming wire 11. The fixed dewatering blades define gaps therebetween. Within the same dewatering zone, the twin-wire also has a plurality of movable dewatering blades 27 mounted opposite to and in between the gaps of the fixed dewatering blades 28. The movable dewatering blades are engaged with the forming wire 12. Figure 3 also shows a similar arrangement of a forming shoe (16) followed by oppositely arranged fixed (44) and movable (27) dewatering blades. Other arrangements are given in Figures 4 and 5 utilizing individual fixed and movable dewatering blades on opposite sides of the wires.

Regarding claim 25, the features just described read on the two wire loops, the dewatering elements, and their arrangements. All other structural features, namely the guide/hitch rolls, leading edge of the forming shoe, and cross-direction orientation of blades are features of the wire loops and dewatering elements, if not actually disclosed or shown in the figures, would be obvious or conventional to one skilled in the art. As to the claimed non-pulsating dewatering in the first dewatering zone after the leading edge of the forming shoe and the claimed pulsating dewatering in the second dewatering zone, these are functional features which do not structurally differentiate the claimed twin wire former from that of Buck. Nevertheless, it is deemed that the configuration given by Buck functions in an equivalent manner. Applicant is invited to point out any structural differences which do not allow the dewatering elements to function according to the claims.

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Regarding claims 26-29, particularly Figure 3 shows headbox 10 discharging a pulp jet 15 into the wedge-shaped entry formed by the two wires. The jet impinges on wire 11 in such a manner so that when wire 11 travels over forming shoe 16, the stock will be in contact with the forming shoe. See also column 4, lines 4-21. The formers shown in Figures 1 and 3 are blade type formers.

The method steps of claims 19-24 are accordingly carried out by the arrangement of the wires, dewatering elements, headbox, and pulp jet of the blade gap type twin-wire former just described.

Regarding claim 35, the embodiment of Figure 5 utilizes a hybrid former constructed from fourdrinier wire 11 and a fitted top forming wire 12 to make a twin-wire forming section. See column 7, lines 57-68. All other claimed features are the same as those described above for claim 25. The method steps of claim 36 are accordingly carried out by the arrangement of the wires and dewatering elements just described.

2. Claims 19-23 and 25-29 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Iwata et al (US 5,871,617)

In Figure 1, Iwata discloses a twin-wire forming section of a paper machine comprising forming wire loops 1 and 2, the two wires forming a twin-wire dewatering area therebetween. The dewatering area is divided into zones. The first dewatering zone includes a fixed forming shoe 9 having a curved surface deck in engagement with forming wire 2. The fixed forming shoe 9 is provided with an open surface and a source of underpressure (8). Forming wire 1 is unsupported by the forming shoe. The next dewatering zone includes a plurality of fixed

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dewatering blades 20 engaging forming wire 1. The fixed dewatering blades define gaps therebetween. Within the same dewatering zone, the twin-wire also has a plurality of movable dewatering blades 21 mounted opposite to and in between the gaps of the fixed dewatering blades 20. The movable dewatering blades are engaged with forming wire 2.

Regarding claim 25, the features just described read on the two wire loops, the dewatering elements, and their arrangements. All other structural features, namely the guide/hitch rolls, leading edge of the forming shoe, and cross-direction orientation of blades are features of the wire loops and dewatering elements, if not actually disclosed or shown in the figures, would be obvious or conventional to one skilled in the art. As to the claimed non-pulsating dewatering in the first dewatering zone after the leading edge of the forming shoe and the claimed pulsating dewatering in the second dewatering zone, these are functional features which do not structurally differentiate the claimed twin wire former from that of Iwata. Nevertheless, it is deemed that the configuration given by Iwata functions in an equivalent manner. Applicant is invited to point out any structural differences which do not allow the dewatering elements to function according to the claims.

Regarding claims 26-29, Figure 1 shows headbox 6 discharging a pulp jet 7 into the wedge-shaped gap entry formed by the two wires. The jet impinges on wire 2 in such a manner so that when wire 2 travels over forming shoe 9, the stock will be in contact with the forming shoe. See also column 4, lines 49-59. The former shown in Figure is a blade type former.

The method steps of claims 19-24 are accordingly carried out by the arrangement of the wires, dewatering elements, headbox, and pulp jet of the blade gap type twin-wire former just described.

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3. Claims 19, 20, 24, 25, 30, 35, and 36 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kotitschke (US 5,914,009).

In Figure 1, Kotitschke discloses a twin-wire forming section of a paper machine comprising forming wire loops 1 and 2, the two wires forming a twin-wire dewatering area therebetween. The dewatering area is divided into zones. The first dewatering zone includes a fixed forming shoe 6 having a curved surface deck in engagement with forming wire 2. The fixed forming shoe 6 is provided with an open surface and a source of underpressure (suction shoe, see column 2, lines 12-14). Forming wire 1 is unsupported by the forming shoe. The next dewatering zone includes a plurality of fixed dewatering blades 7.4 engaging forming wire 1. The fixed dewatering blades define gaps therebetween. Within the same dewatering zone, the twin-wire also has a plurality of movable dewatering blades 7.3 mounted opposite to and in between the gaps of the fixed dewatering blades 7.4. The movable dewatering blades are engaged with forming wire 23. These arrangements are also shown for twin-wire formers given in Figures 2, 5, and 6.

Regarding claim 25, the features just described read on the two wire loops, the dewatering elements, and their arrangements. All other structural features, namely the guide/hitch rolls, leading edge of the forming shoe, and cross-direction orientation of blades are features of the wire loops and dewatering elements, if not actually disclosed or shown in the figures, would be obvious or conventional to one skilled in the art. As to the claimed non-pulsating dewatering in the first dewatering zone after the leading edge of the forming shoe and the claimed pulsating dewatering in the second dewatering zone, these are functional features which do not structurally differentiate the claimed twin wire former from that of Kotitschke.

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Nevertheless, it is deemed that the configuration given by Kotitschke functions in an equivalent manner. Applicant is invited to point out any structural differences which do not allow the dewatering elements to function according to the claims.

Regarding claim 30, the formers shown by Kotitschke are roll and blade type formers.

The method steps of claims 19-20, and 24 are accordingly carried out by the arrangement of the wires, dewatering elements of the roll and blade gap type twin-wire former just described.

Regarding claim 35, column 1, lines 41-46 contemplates utilizing a twin-wire former constructed from a fourdrinier wire, which would obviously include a fitted top forming wire, therefore making it a hybrid former. All other claimed features are the same as those described above for claim 25. The method steps of claim 36 are accordingly carried out by the arrangement of the wires and dewatering elements just described when utilized in a hybrid former.

4. Claims 31-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buck, Iwata, or Kotitschke in view of Wildfong (US 6,372,091).

In the twin wire formers of Buck, Iwata, or Kotitschke described above, particularly the blade gap formers of Buck and Iwata, the features of the curved forming shoe used in the initial dewatering zone are not fully described. The features of claims 31-34 of the present invention are disclosed by Wildfong. Wildfong discloses a curved forming shoe having angled holes creating an open surface area of at least 50% (Figure 12), and having a radius of curvature of 600-4000 mm (column 3, lines 9-27). The shoe is utilized in a manner as the forming shoes in Buck, Iwata, and Kotitschke, that is, used as the initial dewatering device in a twin-wire former.

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Advantages of using the forming shoe of Wildfong include improved fiber and filler distribution in the formed sheet due to improved dewatering performance. Better retention of fines and fillers on high speed machines is another advantage. It would have been obvious to one skilled in the art to use the forming shoe of Wildfong in the twin-wire formers of Buck, Iwata, or Kotitschke to obtain at least the same advantages.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Braun (US 5,225,043) discloses a twin wire former with upper wire forming rails pressing opposite and between the lands of a lower wire forming shoe.

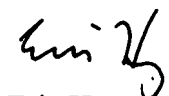
Odell (US 6,669,820 and US 5,798,024) discloses a twin-wire forming section which includes a curved suction forming shoe followed by a plurality of fixed dewatering blades and one or more of movable dewatering blades mounted opposite to and in between the gaps of the fixed dewatering blades.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Hug whose telephone number is 571 272-1192.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571 272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Eric Hug
Primary Examiner